

# PATENT COOPERATION TREATY

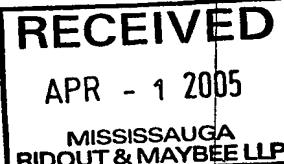
From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

Rec'd PCT/PTO C 8 JUL 2005

PCT

To:

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CANADA



NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

|                                     |            |
|-------------------------------------|------------|
| Date of mailing<br>(day/month/year) | 30.03.2005 |
|-------------------------------------|------------|

Applicant's or agent's file reference  
42370-0002

## IMPORTANT NOTIFICATION

|  |  |  |
|--|--|--|
| International application No.<br>PCT/CA 03/02031 | International filing date (day/month/year)<br>30.12.2003 | Priority date (day/month/year)<br>09.01.2003 |
|--|--|--|

Applicant  
CONNERS, James M.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/B/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

|   |                    |
|---|--------------------|
| Name and mailing address of the international<br>preliminary examining authority: | Authorized Officer |
|---|--------------------|



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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

|   |   |  |
|---|---|--|
| Applicant's or agent's file reference<br>42370-0002   | <b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) |  |
| International application No.<br>PCT/CA 03/02031  | International filing date (day/month/year)<br>30.12.2003  | Priority date (day/month/year)<br>09.01.2003 |
| International Patent Classification (IPC) or both national classification and IPC<br>F01C1/20 |   |  |
| Applicant<br>CONNERS, James M.  |   |  |

|  |
|--|
| <p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 30 sheets.</p>  |
| <p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the opinion</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul> |

|  |  |
|--|--|
| Date of submission of the demand<br>12.07.2004   | Date of completion of this report<br>30.03.2005                        |
| Name and mailing address of the international preliminary examining authority:<br><br>European Patent Office - P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br>Fax: +31 70 340 - 3016 | Authorized Officer<br><br>Lequeux, F.<br>Telephone No. +31 70 340-4664 |



10/541482

JC20 Rec'd PCT/PTO 06 JUL 2005

INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

International application No. PCT/CA 03/02031

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1, 4-25 received on 12.07.2004 with letter of 09.07.2004  
2, 3 received on 01.03.2005 with letter of 24.02.2005

Claims, Numbers

1-13 received on 01.03.2005 with letter of 24.02.2005

Drawings, Sheets

1/22-22/22 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
 the language of publication of the international application (under Rule 48.3(b)).  
 the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority in written form.  
 furnished subsequently to this Authority in computer readable form.  
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages:  
 the claims, Nos.: 15-20  
 the drawings, sheets:

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5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).  
*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. Statement

|                               |             |            |
|-------------------------------|-------------|------------|
| Novelty (N)                   | Yes: Claims | 11         |
|                               | No: Claims  | 1-10,12,13 |
| Inventive step (IS)           | Yes: Claims | 11         |
|                               | No: Claims  | 1-10,12,13 |
| Industrial applicability (IA) | Yes: Claims | 1-13       |
|                               | No: Claims  |            |

2. Citations and explanations

**see separate sheet**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following document:

D1: DE 2550360 A

**1. Preliminary remarks about the claims**

The application lacks clarity (Art 6 PCT) for the following reasons:

- a. the expression "power transfer means" used in claim 1 is vague and unclear as it does not imply a well-recognized set of technical features;
- b. the expressions "expanding substantially adiabatically", "the combuster means is adapted to receive varying amount ... of power in use" and "the compressor is adapted ...to the load being driven by the power" used in claims 1 and 11 are vague and unclear as they attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result. Hence these statements do not add any clear technical features to the subject-matter of the claims and as such they don't limit their scope;
- c. the expression " a reservoir" used in claims 7-9 is vague as it is not clear what the technical features of this reservoir are compared to a normal connection pipe or radiator piping (see for example claims 7 and 8) or even to a pressure tank (see claim 11);
- d. although the generic expressions " a compressor"; "a positive displacement air motor" and " a positive displacement gas expander" are used in claims 1 and 11; it is clear in the light of the description (page 2, lines 23-25; page 3, lines 5-7) that it is the applicant's intention to use the type of machine described rather than any other type. Because of this and of the lack of clear support from the description about other specific types of machines than these in the various illustrated embodiments (fig 1-

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22), these expressions of claims 1 and 11 should be restricted to the particular type of machines described in claim 14 of the present application;

e. the expression "internal combustion engine" (claim 11) is contradictory to the expression "tubular combustor" as, by definition, the characteristic feature of an internal combustion engine is that the combustion chamber is predominantly formed by the working chamber(s) inside the engine and as, from the description and figures (for example fig 1), it is clear that the tubular combustor is a combustion chamber external to the engine.

**2. Independent claim 1**

Taking into account the lack of clarity mentioned here above, the present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 1 is not new in the sense of Article 33(2) PCT. The reasons therefore are the following:

D1 discloses (the references in parentheses applying to this document) (fig 30 and page 20, lines 12-31) an engine with a compressor (4); with a radiator (6a and corresponding portions of the piping connecting the compressor and the engine); with combustor means (5,6); with two positive displacement motors (7) in series; with power transfer means (9).

Hence the subject-matter of claim 1 is not new (Art 33(2) PCT). The subject-matter of claim 1 is industrially applicable (Art 33(4) PCT).

**3. Dependent claims 2-10 and 12-13**

Dependent claims 2-10 and 12-13 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of Art 33 PCT in respect of novelty and/or inventive step as the combination of features that they contain is already disclosed in the prior art documents (see cited documents and corresponding passages in the search report) taken alone or in combination or are merely a combination of obvious and well-known features (see for example claims 8 or 10). The subject-matter of claims 2-10 and 12-13 is industrially applicable (Art 33(4) PCT).

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International application No. PCT/CA 03/02031

**4. Independent claim 11**

The combination of the features of independent claim 11, with the necessary clarifications (see point 1), is neither known from, nor rendered obvious by, the available prior art and therefore the subject-matter of claim 11 meets the requirements of Art 33 PCT in respect of novelty and inventive step. The subject-matter of claim 11 is industrially applicable (Art 33(4) PCT).